REMARKS

Applicants appreciate the detailed examination evidenced by the Final Office Action mailed October 9, 2007 (hereinafter "Final Action") and the Advisory Action mailed January 23, 2008 ("Advisory Action"). Applicants appreciate the indication that the previous drawing objections and the 35 U.S.C. §112, second paragraph, and 35 U.S.C. §101 rejections are withdrawn. Applicants have amended claims 1, 3, 5, 10, 12, 14, 19, 21, 23, 28, 30, 32, and 34. Claims 1, 3-10, 12-19, 21-28, 30-32, 34 and 35 are pending. Applicants have provided remarks herein detailing why the cited references do not disclose all the recitations of the pending claims. Applicants respectfully submit that the pending claims are patentable for at least the reasons described herein.

Independent Claims 1, 10, 19, 28, and 32 are patentable over Chung et al. and Yonnet

Claims 1, 3, 5-10, 12, 14-19, 21, 23-28, 30-32 and 34-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "Integrated Simulation of Equipment and Topography for Plasma Etching in the DRM Reactor," by W.Y. Chung, J.J. Oh, T.K. Kim, J.K. Shin, K Seo, Y.K. Park, and J.T. Kong, 2000 IEEE (hereinafter "Chung") in view of "Permanent magnet Configuration for Magnetic-Field-Enhanced RIE," by J.P. Yonnet and A. Picard, IEEE 1990 (hereinafter "Yonnet"). Applicants respectfully submit that the rejections are moot in view of the amendments provided herein and that Chung and Yonnet, alone or in combination, do not disclose or suggest all of the recitations of Claims 1, 10, 19, 28 and 32.

Claim 1, as amended, recites, in part:

> obtaining configuration and process condition data for the reaction chamber, the ***data comprising a 3-dimensional distribution of a static electromagnetic field induced by the plurality of magnets in the reaction chamber***;
>
> computing plasma characteristics for each of a plurality of cross-sections of the reaction chamber from the data, ***the plurality of cross-sections being selected from the 3-dimensional distribution of the static electromagnetic field***.

(*Emphasis added.*) Claims 10, 19, 28 and 32 include similar recitations.

As a general matter, Applicants note that, in contrast with the Chung and Yonnet, the cross-sections can be selected by at least one characteristic magnetic field **direction**. For

example, referring to FIG. 5, characteristic magnetic field directions may include I, II and III, which may have about 180, 120 and 60 Gauss, respectively. Specification, paragraph 0055. As illustrated in FIG. 5, the magnetic field directions can be selected by considering which direction is representative and/or dominant. In this manner, the distribution trend of the 3-dimensional static electromagnetic field may be more accurately estimated.

Additionally, the 3-dimensional distribution of the static electromagnetic field may be minimally affected by a state of plasma in a plasma reaction chamber. In this regard, in contrast with Chung and Sonnet, obtaining the 3-dimensional distribution of the static electromagnetic field may be performed before computing the plasma characteristics. Accordingly, computing the plasma characteristics may be performed only for selected cross-sections. Accordingly, the simulation method described in Applicants' disclosure may be performed in a fast and low-cost manner relative to those previously used.

Further, Applicants note that Chung and Yonnet, alone or in combination would not disclose other of the recitations of Claim 1. For example, the Final Action states that Yonnet discloses performing the simulation for cross-sections "includes **an** axis." In contrast, Claim 1 recites that each of the plurality of cross-sections includes **the** axis of rotation. Applicants respectfully note that "**the** axis of rotation," as recited in Claim 1 is specific relative to other recitations of the Claim.

Additionally, the cited portion of Yonnet describes moving magnets such that "the magnet rotation axes are parallel, in the same plane and their spacing is 'E'" and that "all the magnets are driven synchronously at the same uniform rotation speed." Yonnet, IV. Rotating Magnet Systems. In this regard, as illustrated in Figure 6 (reproduced below), Yonnet appears to describe that the magnets are arranged in a planar configuration and that each magnet appears to rotate about its own longitudinally oriented axis. In this regard, Yonnet does not appear to describe a specific axis of rotation that is common to the plurality of magnets. As such, any processes simulated and/or performed that are described in Yonnet are necessarily not performed regarding cross-sections that include "**the** axis of rotation," as recited in Claim 1.

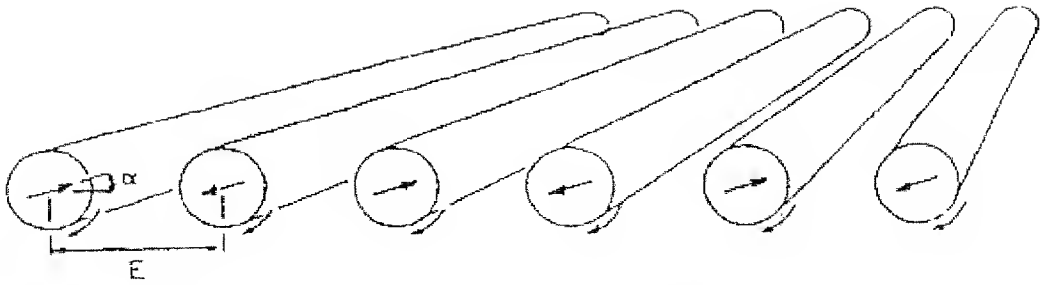

Fig. 6. Rotating magnet system, using parallel-magnetized bar-shaped magnets.

Thus, Yonnet does not disclose or suggest computing plasma characteristics for each of a plurality of cross-sections of the reaction chamber such that each of the plurality of cross-sections includes the axis of rotation, as recited in Claim 1. Accordingly, **Yonnet does not provide the teachings alleged in the Final Action** and the combination of Chung and Yonnet does not teach or suggest all the recitations of Claim 1.

Moreover, in contrast with Claim 1, Yonnet does not appear to generate a plasma model that includes any of the axes of the magnets. For example, as illustrated in Fig. 5 of Yonnet (reproduced below), the plasma appears to be above a linear arrangement of permanent magnets fixed on a roller chain. In this regard, since Yonnet does not appear to describe a reactor chamber that includes any axes of the magnets, one of ordinary skill in the art would not be motivated to consider the teachings of Yonnet and Chung together.

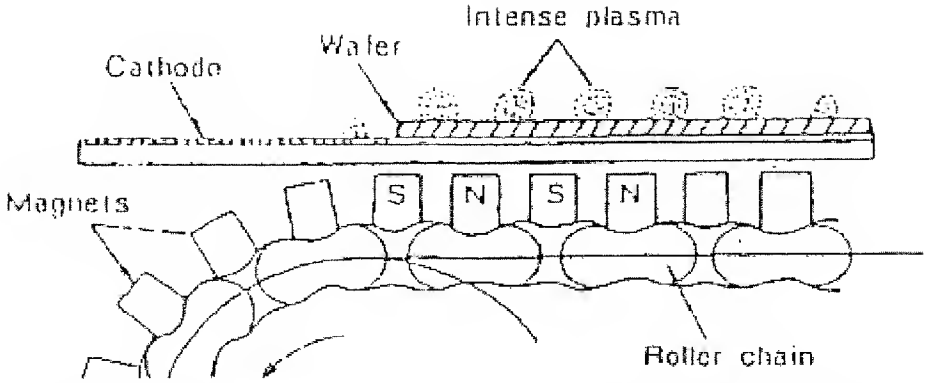

Fig. 5. Continuous scanning made with permanent magnets fixed on a roller chain [10].

For at least the foregoing reasons, Applicants submit that Claim 1 is patentable. Applicants submit that independent Claims 10, 19, 28 and 32 are patentable for at least similar reasons.

The Dependent Claims Are Patentable

Applicants submit that the dependent claims are patentable at least by virtue of the patentability of the various ones of independent Claims 1, 10, 19, 28, and 32, from which they depend.

Conclusion

Applicants submit that the claims are patentable for at least the reasons discussed above. Applicants respectfully request allowance of the claims and passing of the application to issue in due course. Applicants encourage the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

Timothy J. Wall
Registration No. 50,743
Attorney for Applicant(s)

USPTO Customer No. 20792
Myers Bigel Sibley & Sajovec
Post Office Box 37428
Raleigh, North Carolina 27627
Telephone: 919/854-1400
Facsimile: 919/854-1401

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Michele P. McMahan